

FM/AM Cassette Car Stereo

XR-2390

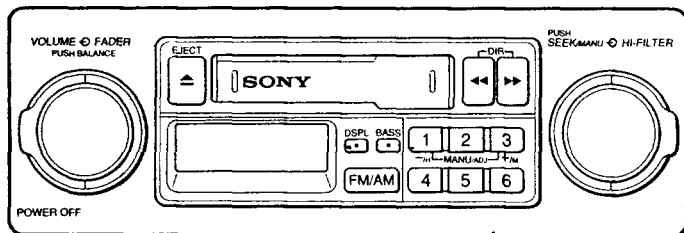
Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

Owner's Record

The model and serial numbers are located at the top of the unit. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. XR-2390 Serial No. _____



For installation and connections, see the supplied installation/connections manual.

WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Precautions

- If your car was parked in direct sunlight resulting in a considerable rise in temperature inside the car, allow the unit to cool off before operating it.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.
- If no sound comes from the speakers of a 2-speaker system, set the fader control to the center position.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

Protection circuit

The built-in power amplifier employs a protection circuit to protect the speakers if the amplifier malfunctions. When the protection circuit activates, there will be an abrupt loss of sound from the speakers. Particularly, when speakers with a low input impedance (less than 4 ohms) are connected to the unit, the sound will be discontinued. This, however, is not a problem. If this happens, turn the volume down a little.

Notes on Cassettes

Cassette care

- Avoid touching the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- Keep cassettes away from equipment with built-in magnets such as speakers and amplifiers, as erasure or distortion on the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures or moisture.
- The cassette shell may become warm when the tape is played back for a long period of time because of the built-in power amplifier. However, this is not a sign of a malfunction.

Note on cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous play. The tapes used for these cassettes are very thin and tends to be stretched easily. Frequent playing and stopping operation for these tapes may cause them to be pulled into the cassette deck mechanism.

Features

General

- Fader control for playback with a 4-speaker system.
- Built-in power amplifier (max. output: 20 W × 4 ch) enables you to enjoy a 4-speaker system.
- Provided with a digital 12-hour clock (page 6).

Tuner section

- **SSIR (Sony Super Interference Rejection) PLL synthesizer tuner**
- The quartz-locked digital synthesizer system enables easy and accurate tuning.
- Up to 18 stations can be preset, 12 stations on FM, 6 stations on AM.

Cassette player section

The auto-reverse function changes the tape direction automatically.

Table of Contents

Location and Function of Controls	4
Setting the Clock	6

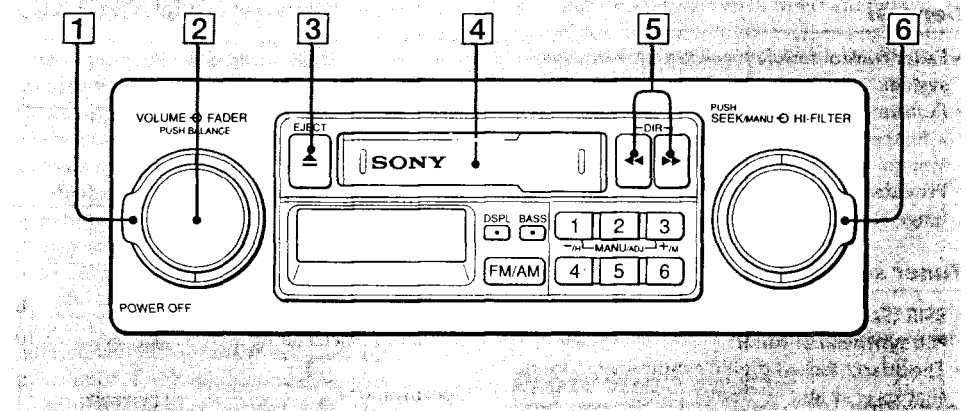
Cassette Player Operation

Listening to the Tape Playback	7
--------------------------------------	---

Radio Reception

Searching for the Stations Automatically	
—Automatic Tuning	8
Tuning in by Adjusting the Frequency	
—Manual Tuning	9
Memory Preset Tuning	10
Specifications	11

Location and Function of Controls



1 FADER control

Turn clockwise to decrease the volume of the rear speakers or counterclockwise to decrease the volume of the front speakers.

2 POWER OFF (power on/off) switch/VOLUME/PUSH BALANCE control

POWER OFF switch	Turn clockwise to turn on the unit and counterclockwise to turn off.
VOLUME control	Turn clockwise to increase volume and counterclockwise to decrease.
PUSH BALANCE control	Turn while pressing to adjust the balance of the left and right speakers.

3 EJECT button

Press to stop the tape and take out the cassette.

4 Cassette insertion door

5 <</>> (fast winding)/DIR (tape transport direction change) buttons

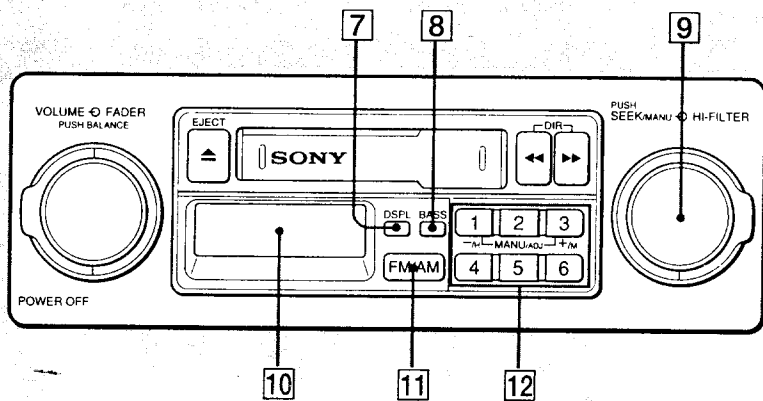
To listen to the other side of the cassette	Press << and >> simultaneously.
---	---------------------------------

To wind the tape rapidly		
Direction indicator	To advance	To rewind
▶	Press >>.	Press <<.
◀	Press <<.	Press >>.

To resume playback, press << or >> (that one which is not depressed) lightly.

6 HI-FILTER (high-cut filter)

Turn counterclockwise to reduce the high frequency and produce a easy sound.



7 DSPL (display change) button

Each time you press the button, the display modes change as follows:
Frequency ↔ Clock

8 BASS (bass boost) button

Press to reinforce bass especially when listening at low volume.
To disengage the button, press it again.

9 PUSH SEEK/MANU button

PUSH SEEK button Press for automatic tuning.

PUSH MANU button Press the button for more than two seconds to enter the manual tuning mode, then adjust the frequencies using the preset number button **1** or **3**.

10 Display window

11 FM/AM (band select) button

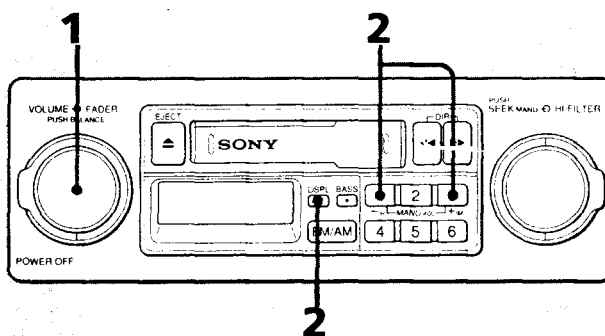
Each time you press the button, the band changes as follows:

→ FM1 → FM2 → AM

12 Preset number buttons 1-6

Use the **1** and **3** buttons also for manual tuning and clock setting.

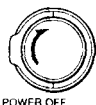
Setting the Clock



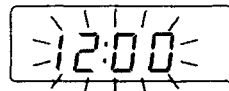
The clock has a 12-hour digital indication.

For example, to set it to 10:08.

- 1** Turn clockwise to turn the power on.

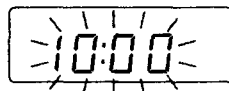


- 2** Press the DSPL button and hold it down.
The indication starts to blink after two seconds.



With the DSPL button hold down, proceed with the following:

Press the **1** button to set the hour digits.



Press the **3** button to set the minute digits.



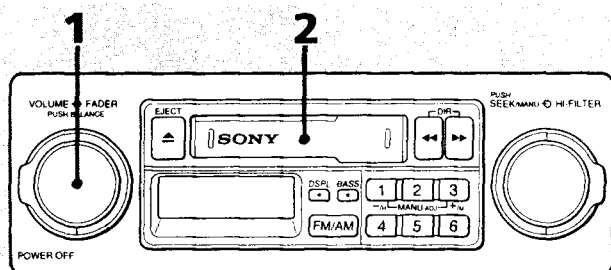
- 3** The clock starts activating when you take your finger off the DSPL button.



When you set minute digits "00" comes after "59". Setting the hour digits will not affect the minute digits.

When setting the minute digits, the second digits will change to "00".

Listening to the Tape Playback



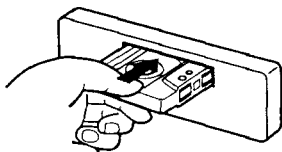
Before inserting a cassette, take up any slack in the tape with a thick pencil.

Cassette Player Operation

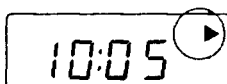
- 1 Turn clockwise to turn the power on.



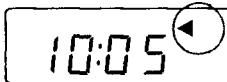
- 2 Insert a cassette.
Playback starts automatically.



Direction indicator



The side facing up is being played back.

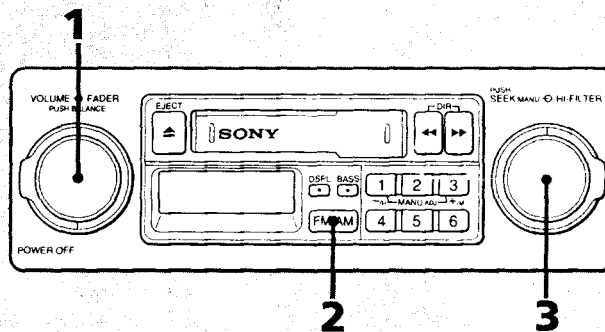


The side facing down is being played back.

To stop the tape playback and listen to the radio

Press the EJECT button.
The unit enters the radio mode.

Searching for the Stations Automatically — Automatic Tuning



- 1** Turn clockwise to turn the power on.



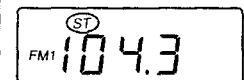
- 2** Press to select the desired band, FM1, FM2, or AM.
Each time the button is pressed, the corresponding indicator appears in the display window.

FM/AM

- 3** Press the PUSH SEEK button.
Stations will be scanned automatically and scanning will stop when a station is tuned in. Repeat pressing the PUSH SEEK button until the desired station is tuned in.



When an FM stereo program with sufficient signal strength is tuned in



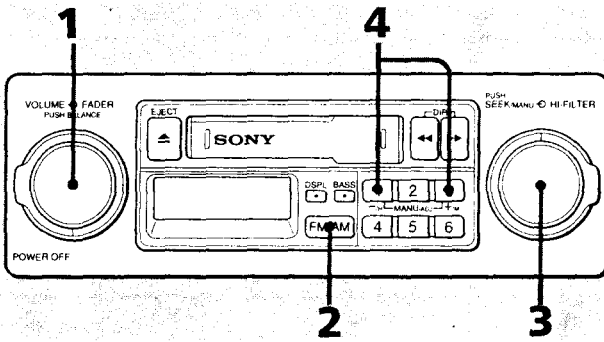
The "ST" indication appears.

To play back a cassette during radio reception

Insert a cassette. The radio will be turned off and playback will start automatically.

Tuning in by Adjusting the Frequency

— Manual Tuning



Radio Reception

- 1** Turn clockwise to turn the power on.



POWER OFF

- 2** Press to select the desired band, FM1, FM2, or AM.
Each time the button is pressed, the corresponding indicator appears in the display window.

FM/AM

- 3** Press the PUSH MANU button for more than two seconds; the sound will mute.
When the sound comes on again, the unit will be in the manual mode.



PUSH
SEEK MANU HI FILTER

- 4** Press preset button 1 or 3, and adjust the frequency.



MANU/ADJ

(For lower
frequencies)

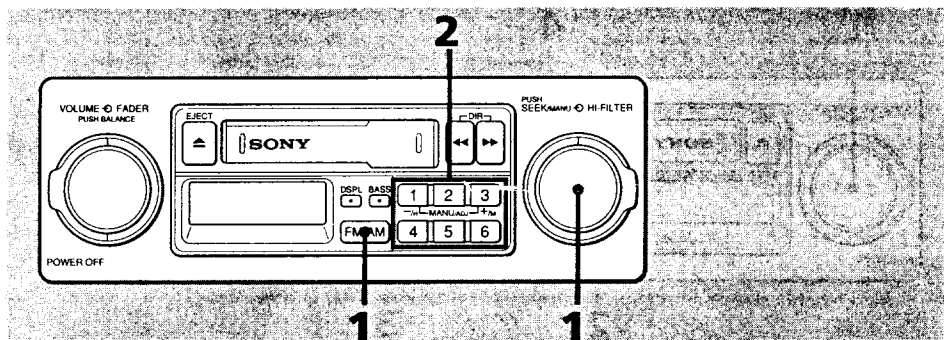
(For higher
frequencies)

If you don't adjust within two seconds, the manual mode will be canceled

PREVENTING ACCIDENTS!

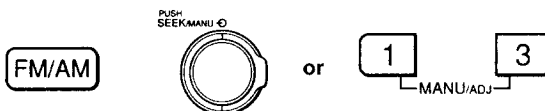
While you are driving, the use of the Automatic Tuning and the Memory Preset Tuning is recommended in favor of the Manual Tuning.

Memory Preset Tuning



Memorizing Only the Desired Stations

- 1** Tune in a desired station using automatic or manual tuning (see page 9).



- 2** Keep the desired preset number button pressed for more than two seconds, until the "MEM" indication comes on.



The station is now memorized.

Repeat these steps for each station.

Receiving the Memorized Stations

- 1** Press to select the desired band.



- 2** Press the desired preset number button.



Note

The previously memorized station will be erased when you enter a new station of the same band on the same preset number button.

Note

If you keep pressing the preset number button for more than two seconds, the currently received station will be memorized. To receive the previously memorized station, press the preset number button lightly.

Specifications

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION

7 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1% total harmonic distortion.

Other Specifications

Tuner section

FM

Tuning range	87.5 – 107.9 MHz
Antenna terminal	External antenna connector/Power antenna relay control lead
Usable sensitivity	13 dBf (75 ohms)
Selectivity	more than 70 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 67 dB (monaural)
Harmonic distortion at 1 kHz	0.9% (stereo), 0.5% (monaural)
Separation	33 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

AM

Tuning range	530 – 1,710 kHz
Antenna terminal	External antenna connector/Power antenna relay control lead
Sensitivity	32 μ V

Cassette player section

Tape track	4-track 2-channel stereo
Frequency response	40 – 15,000 Hz
Signal-to-noise ratio	55 dB with TYPE I cassettes
Wow and flutter	0.13%

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	20 W \times 4 (at 4 ohms)

General

High-cut filter	–10 dB at 10 kHz
Bass boost	+8 dB at 100 Hz
Power requirements	12 V DC car battery (negative ground)
Mounting dimensions	Approx. 178 \times 50 \times 140 mm (w/h/d) (7 ¹ / ₈ \times 2 \times 5 ⁵ / ₈ in.)
Mass	Approx. 1.2 kg (2 lb. 10 oz.)
Accessories supplied	Mounting hardware (1 set) Power connecting cord (1)

Design and specifications subject to change without notice.